Name:

at1113exam: Expand, factor, and solve quadratics (v336)

1. Expand the following expression into standard form.

$$(5x + 7)(5x - 7)$$

$25x^2 - 35x + 35x - 49$

$25x^2 - 49$

2. Expand the following expression into standard form.

$$(4x + 7)(5x + 2)$$

$20x^2 + 8x + 35x + 14$

$20x^2 + 43x + 14$

3. Solve the equation.

$$(5x - 3)(7x - 4) = 0$$

$x = \frac{3}{5}$ $x = \frac{4}{7}$

4. Expand the following expression into standard form.

$$(5x + 8)^2$$

$25x^2 + 40x + 40x + 64$

$25x^2 + 80x + 64$

5. Factor the expression.

$$x^2 + 6x + 8$$

$$(x + 2)(x + 4)$$

6. Solve the equation.

$$8x^2 - 7x - 6 \;=\; 5x^2 + 4x - 2$$

$$3x^2 - 11x - 4 = 0$$
$$(3x + 1)(x - 4) = 0$$
$$x = \frac{-1}{3} \qquad x = 4$$

7. Factor the expression.

$$16x^2 - 49$$

$$(4x + 7)(4x - 7)$$

8. Solve the equation with factoring by grouping.

$$10x^2 + 15x + 8x + 12 \;=\; 0$$

$$(5x + 4)(2x + 3) = 0$$
$$x = \frac{-4}{5} \qquad x = \frac{-3}{2}$$